

**REMARKS**

Claims 15-18 are pending prior to entry of the present Amendment, claims 1-14 having been previously withdrawn pursuant to a restriction requirement. Claim 15 has been amended. Claim 19 has been added. Claims 15-19 remain pending for examination on the merits after entry of the present Amendments. No new matter has been added.

Reconsideration is requested in view of the following remarks.

**Support for Claim Amendments**

Claim 15 has been amended to clarify that the positioning of the specimen chamber is done after first accommodating the suspension specimen in the specimen chamber. Support for the amendment can be found in the specification at least at paragraph 0037, lines 7-9 of the published application (US 2006/0131196). Claim 15 has also been amended to clarify that the first and second frame parts are separate parts before assembling them together, and that the specimen chamber is clamped by the frame parts rather than between the frame parts. Support for the amendment can be found in the specification at least at paragraph 0034, lines 8-10 of the published application.

Claim 19 has further been added to recite that each of the frame members has a circumferential shape. Support for the amendment can be found in the specification at least at paragraph 0026, lines 6-10 of the published application.

**Rejection of Claims 15-18 under 35 U.S.C. §§ 102 / 103**

Claims 15-18 stand rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, WO 02/46719 (corresponding to US 2004/0065093) to Fuhr, et al. (“Fuhr”). Applicants respectfully traverse the rejection of claims 15-18.

**Fuhr Does Not Anticipate Claims 15-18**

It is hornbook law that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” MPEP §2131 (quoting *Verdegaal Bros. v. Union Oil Co. of Calif.*, 2 USPQ2d

1051, 1053 (Fed. Cir. 1987)). “The identical invention must be shown in as complete detail as is contained in the . . . claim.” Id. (quoting *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added)). Fuhr does not meet this test.

Fuhr does not anticipate claims 15 because Fuhr fails to disclose each and every element recited in claim 15. Indeed, Fuhr fails to disclose several elements recited in claim 15. Claims 16-18 depend from claim 15.

Fuhr does not disclose a mounting frame comprising a first frame part and a separate second frame part. Further, Fuhr does not disclose connecting elements for detachably assembling together such first and second frame parts. Still further, Fuhr does not teach a specimen chamber clamped by the first and second frame parts such that the specimen chamber is immovable relative to the mounting frame.

The Examiner asserts that Fuhr discloses a mounting frame having first and second frame parts such that side faces of the first and second frame parts come into contact, and that the first and second frame parts each come into contact with the specimen chamber, when the specimen chamber is securely “clamped between” the first and second frame parts. Applicants respectfully submit that Fuhr does not disclose such a mounting frame. Nevertheless, Applicants have amended claim 15 to clarify that the specimen chamber is “clamped by” the first and second frame parts.

The Examiner contends that Fuhr at Fig. 17 and paragraph 0082 discloses “the positioning of the flexible material between a first [and] a second part of the mounting frame and the closure of the tubes by clamping at a location between the parts of the mounting frame.” Office Action at page 5, lines 4-6. Applicants surmise that the Examiner has construed the claim terms “clamped” and “between” in isolation such that “between” provides only a spatial reference with regard to where the specimen chamber is “clamped.” Even with such a strained reading of the claim, the Examiner’s assertion is incorrect, because it is readily apparent from Fuhr Fig. 17 that the specimen chamber 615 is clamped together upon itself to form a cover (in place of the cover 614) at a location that is outside of, and not between, parts of the frame 627.

Moreover, one of skill in the art would clearly understand that the term “clamped between” must be construed as a whole to mean that the specimen chamber is held

tight by disposing a first part of the frame on one side of the specimen chamber and a second part of the frame on an opposite side of the chamber such that when the first and second parts of the frame are assembled to one another, the specimen chamber is “clamped between” and by the first and second parts or held by compression force by the two parts of the frame acting on opposite sides of the specimen chamber.

Accordingly, Applicants have amended claim 15 to recite that the specimen chamber is “clamped by” the first and second frame parts, in order to avoid any confusion that may have been present in the previous claim language. Therefore, there is no question that Fuhr does not disclose the invention as recited in claim 15.

In particular, none of the configurations cited by the Examiner (i.e., Fuhr Figs. 17, 18, and 21-24) discloses the claimed method using an apparatus as recited. With regard to the specimen carrier of Fuhr Fig. 17, paragraph 0078 makes plain that “[t]he plastic frame 627 is an injection molded part” in the form of a rectangle that has lateral sides that “are provided with bores in which the cryo-containers [615] are arranged.” (Applicants note that a typographical error in Fuhr designates the cryo-containers as reference numeral 625, which instead refers to the contact electrodes protruding from the bottom of the specimen data storage 622.) While the specification identifies the lateral sides of the frame 627 as “lateral frame parts,” it is clear that these “lateral frame parts” are integral parts of the rectangular injection molded plastic frame shown in Fig. 17.

Thus, it is understood that the injection molded plastic frame 627 of Fuhr has an integral structure and that the thin tubular specimen chambers 615 are inserted into holes or bores within the sidewalls of the frame 627, so that there is no clamping of the specimen chambers 615 by any parts of the frame 627.

Further, the frame parts mentioned in Fuhr are not adapted for assembling together using one or more connecting elements, as recited in claim 15, so that the apparatus of Fuhr does not and cannot clamp the specimen chamber by (and between) any such first and second frame parts. Indeed, the Examiner fails to identify any “connecting elements” in Fuhr that are adapted to detachably assemble together the first and second frame parts. Applicants respectfully submit this is because Fuhr does not disclose any such “connecting elements.” Moreover, such connecting elements would not be obvious to one of skill in the art reading

Fuhr, as the Examiner contends (Office Action at page 6, lines 7-11), because Fuhr lacks separate frame parts that require connection so that the skilled artisan never even would have the need for any connecting elements.

Still further, claim 15 recites that the specimen chamber is securely clamped "such that it is immovable relative to the mounting frame." This is clearly not the case with regard to the plastic frame 627 taught by Fuhr; one of skill in the art would understand that the specimen chamber 615 is merely positioned within bores in the frame 627 such that the specimen chamber 615 can be shifted along its longitudinal direction with respect to the frame 627, and the specimen chamber 615 can be rotated about its longitudinal axis within the bores in the frame 627. Thus, the embodiment of Fuhr Fig. 17 fails to disclose a specimen chamber that is immovably clamped relative to the mounting frame.

With regard to the specimen carrier of Fuhr Fig. 18, paragraph 0080 makes clear that "cryo-containers 615 are integrated into the encapsulation 626 (enclosed). This can take place by injection of the cryo-container 615 into the encapsulation material or an adhesive bonding." Thus, the encapsulation 626 does not have a first part and a second part by which the specimen chambers 615 are clamped, and no connecting elements are present for detachably assembling together such parts.

With regard to the specimen carrier of Fuhr Figs. 21 and 22, this is the same "frame-type specimen carrier 621 [as in] Fig. 17." See Fuhr at paragraph 0088. Thus, the frame does not have a first part and a separate second part by which the specimen chamber is clamped.

With regard to the specimen carrier of Fuhr Fig. 23, the specification at paragraph 0091 specifically refutes the Examiner's contention by teaching specimen chambers that are integrated in a substrate material: "On the underside of the substrate 810, channel-like specimen chambers 623 are formed as specimen receptacles which are closed with a cover layer 820." Thus, one of ordinary skill in the art would readily understand that a specimen chamber that is integrally incorporated in a substrate is not clamped by a first part and a separate second part of such a substrate. Also, no connecting elements are present for detachably assembling together such parts.

The specimen carrier of Fuhr Fig. 24 is merely a multi-level embodiment of the

specimen carrier of Fig. 23, in which “multiple levels with specimen chambers 623 can be provided” integrally within structured substrate layers. See Fuhr at paragraph 0092.

In sum, none of the specimen carriers taught by Fuhr has a first frame part and a separate second frame part, none of the specimen carriers taught by Fuhr has connecting elements for detachably assembling together such first and second frame parts, and none of the specimen carriers taught by Fuhr discloses a specimen chamber securely clamped by the first and second frame parts so that the specimen chamber is immovable relative to the mounting frame.

Therefore, for at least the foregoing reasons, Fuhr does not anticipate claim 15 or claims 16-18 which depend therefrom.

#### Fuhr Does Not Render Obvious Claims 15-18

In making a case for obviousness, the Examiner must: (1) determine the scope and content of the prior art; (2) ascertain the differences between the prior art and the claims at issue; (3) resolve the level of ordinary skill in the pertinent art; and (4) evaluate evidence of secondary considerations. *Graham v. John Deere*, 383 U.S. 1 (1960); *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007). When applying 35 U.S.C. § 103, the following tenets of patent law must be followed: (1) the claimed invention must be considered as a whole; (2) the references must be considered as a whole; (3) the references must be viewed without the benefit of impermissible hindsight afforded by the claimed invention; and (4) the standard for determining obviousness is a reasonable expectation of success. MPEP § 2141.

Claim 15 would not have been obvious to one of ordinary skill in the art based on the teachings of Fuhr. Claims 16-18 depend from claim 15.

In addition to the deficiencies of Fuhr discussed above, Applicant respectfully emphasizes that claim 15 is directed to a method of cryo-storing suspension specimens, the method including a series of sequential steps. First, the specimen is accommodated or loaded into the specimen chamber. Next, the specimen chamber is positioned on a first frame part of a mounting frame. Subsequently, a second frame part is detachably assembled to the first frame part using one or more connecting elements such that the specimen chamber is securely and immovably clamped by the first and second frame parts. Finally, the specimen

in the specimen chamber is frozen by positioning the specimen carrier, including the mounting frame, in a cryomedium.

In contrast, Fuhr teaches a different sequence of steps, and thus a different method. It would not have been obvious to vary the sequence of Fuhr's steps to obtain the claimed method, because the apparatus of Fuhr cannot be made to work with the claimed sequence of steps. An overview of the Fuhr steps is set forth in paragraph 0080. In Fuhr, the specimen chamber 615 (made from a meandering hose) is first positioned in the mounting frame 627; at this time there is no specimen in the specimen chamber 615. See Fuhr at paragraphs 0078 and 0079, and Figs. 17-18. Once the specimen chamber 615 has been arranged in the frame 627, the specimen is loaded into the specimen chamber 615. See Fuhr at paragraphs 0084, 0085, 0088, and 0089, and Figs. 17-19 and 21-22. Next, the individual specimen chambers 615 are clamped off and/or cut off and capped by a cap 614. See Fuhr at paragraphs 0080 and 0082, and Figs. 17 and 22. Finally, the specimens are frozen.

Based on the foregoing description of the claimed method and the method taught by Fuhr, it is readily apparent to one of skill in the art that the Fuhr apparatus could not be modified to achieve the claimed method, and Fuhr makes no suggestion that such a modification could be possible. In particular, the meandering hose of Fuhr cannot be loaded with specimen before it is positioned in the mounting frame. Indeed, Applicants note that Fuhr has devised a special purpose apparatus, as shown in Figs. 21-22 and described in paragraph 0088, that is useful for loading specimen in the specimen chamber 615 only after the specimen chamber is positioned on the mounting frame 627.

In addition, the Examiner erroneously contends that Fuhr Fig. 13 teaches a construction of mounting frames that can be detachably assembled together. Office Action at page 5, line 22 to page 6, line 1. In fact, Fuhr Fig. 13 does not disclose a mounting frame but rather discloses a storage substrate 500 having a base body 510 from which mushroom-shaped projections 511 extend such that specimen carriers 521 can be fixed on the projections 511. See Fuhr at paragraph 0067. Moreover, neither Fuhr Fig. 13, nor any other part of Fuhr's disclosure, teaches the concept a specimen chamber clamped by separate parts of a mounting frame that are detachably assembled using one or more connecting elements.

Further, the Examiner contends that the clamping of a specimen tube upon itself, as

disclosed in paragraph 0082 of Fuhr, falls within the scope of the claim. However, a skilled artisan would immediately understand that the clamping mentioned in paragraph 0082 of Fuhr serves the function of covering or closing off the specimen chamber and does not immovably secure the specimen chamber with respect to the frame by causing the specimen chamber to be clamped by separate first and second parts of the frame.

Applicants respectfully submit that the Examiner's argument is an ex-post analysis that improperly employs hindsight reasoning by using the teachings of the application itself as a guide to interpret the prior art. See MPEP §§ 2141.01(III) and 2142. Because Fuhr does not disclose a mounting frame made from separate frame parts or connecting elements for detachably assembling such separate frame parts together, it would not have been obvious for one of ordinary skill in the art having knowledge of Fuhr to devise an apparatus and method wherein a specimen chamber is clamped by separate frame parts as claimed.

Therefore, for at least the foregoing reasons, Fuhr does not render obvious claim 15 or claims 16-18 which depend therefrom.

Accordingly, Applicants respectfully request withdrawal of the rejection of claims 15-18 as anticipated by, or alternatively as obvious in view of, Fuhr.

#### New Claim

Claim 19 has been added to further emphasize certain differences between the claimed method and the apparatus and method disclosed by Fuhr. Claim 19 depends from claim 15 and recites that each of the first and second frame parts has a circumferential shape.

Applicants respectfully submit that the features of claim 19 are not disclosed or suggested by Fuhr. In particular, Fuhr does not disclose or suggest providing a mounting frame made of separate frame parts each having a circumferential shape which can be assembled together to clamp a specimen chamber.

Therefore, claim 19 is patentable over Fuhr, both on its own merits and by virtue of its dependence from claim 15.

**Conclusion**

In view of the foregoing, the application is believed to be in condition for allowance. Withdrawal of all rejections, and an early notice of allowance of claims 15-19, are earnestly solicited.

Respectfully submitted,

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